TITLE OF THE ABSTRACT:

Prospective Observational study to determine the causes of hypokalemia and in medical wards and its association with other comorbidities and death

DEPARTMENT: General Medicine

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OBJECTIVES:

1. Calculate proportion of patients with hypokalemia and its causes in adult medical wards
2. Dose and duration of potassium required for correction
3. Correlation of Hypokalemia and mortality
4. Association of hypokalemia with other comorbidities
5. Association of ECG changes with severity of hypokalemia

METHODS:

Total of 201 patients were recruited after taking a written informed consent. Every tenth consecutive patient was a control (patients with serum potassium more than or equal to 3.5 meq/l). Cases were all patients who had serum potassium <3 meq/l on day 1 of hospital admission. Data was collected with the help of a data abstraction sheet. All patients were followed up till the point of death or discharge. Data collected at follow up were the dose, duration and route of potassium required for achieving eukalemia, final diagnosis and final outcome. Data entry was made using Epidata 3.1. Analysis was done using SPSS software.

RESULTS:

1) Proportion of hypokalemic patients: 48%(CI 0.42-0.53); proportion of mild, moderate and severe hypokalemic patients: 37% (CI 0.32-0.42), 8% (CI 0.05-0.11) and 3% (0.01-0.05) respectively
2) Underlying causes: undetermined (80.7%), vomiting (33.7%), loose stools (15.5%)
3) Mortality rate: cases (4.4%), control (0.4%). Statistically not significant
   Mortality rate based on severity of hypokalemia: Mild (3.9%), moderate (0%), severe (0.04%). Statistically not significant
4) Univariate analysis of comorbidities and hypokalemia did not show a statistically significant relationship

5) Univariate analysis of inciting agents and hypokalemia did not show a statistically significant relationship
6) Most of the mild hypokalemics became eukalemic with minimal dose of potassium correction. Mainly intravenous correction was done at an average dose of 1.5 gram for an average duration of 4 hours
7) Most of the moderate hypokalemics required potassium correction for becoming eukalemic, consisting of both oral and intravenous routes, at an average total dose of 6 grams. Through the intravenous route, an average dose of 4.5 gram was used. Oral route was mostly not used. If given orally, maximum number of patients received a dose of 0.13 gram. Duration for mild hypokalemics to become eukalemic was 12 hours at an average.
8) Severe hypokalemics needed an average of 15 gram for achieving eukalemia with an average intravenous dose of 9 gram of potassium. Oral correction was mostly not used. If oral route was used, then the maximum number of patients needed 9g correction through this route. It took an average of 28 hours for severe hypokalemics to achieve eukalemia
9) ECG changes occurred both in cases and control at equal frequency. Decreased T wave amplitude, QT prolongation and flattening of T waves were seen more among cases. U waves were observed only among cases.